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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,610

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EXAMINER

TSOY, ELENA

ART UNIT

PAPER NUMBER

1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/08/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/758,610

Applicant(s)

WONG ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 22-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/04, 6/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

*Election/Restrictions*

1. Applicant's election without traverse of Group I, claims 1-21 in the reply filed on January 12, 2007 is acknowledged.

*Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, "wherein the ablative composition **forms** a thermal protection layer for the surface", which renders the claim indefinite because claim 1 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to the surface. For examining purposes the phrase was interpreted as "wherein the ablative composition is adapted to forms-a thermal protection layer for the surface", i.e. as intent of use of the ablative composition.

Claim 2 recites, "wherein the intumescent material is intermixed with only a portion of the thickness of the ablative material", which renders the claim indefinite because claim 1 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to the surface to form a coating having a thickness. For examining purposes the phrase was interpreted as "wherein the intumescent material is adapted to be intermixed with only a portion of the thickness of the ablative material", i.e. as intent of use of the ablative composition.

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Claim 3 recites, “wherein different quantities of said intumescent material are intermixed with said ablative material at different thickness layers of the ablative material”, which renders the claim indefinite because claim 1 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to the surface to form a coating having a thickness. For examining purposes the phrase was interpreted as “wherein different quantities of said intumescent material are intermixed with said ablative material to be applied at different thickness layers of the ablative ~~material~~ composition”, i.e. as intent of use of the ablative composition.

Claims 4 and 5 recite, “wherein the intumescent material is intermixed in different quantities, and applied in successive layers to the surface, so that the ablative composition is formed by a series of layers”, which renders the claim indefinite because claim 1 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to the surface to form a coating layer, and because the ablative composition of claim 1 is formed by mixing the ablative material with the intumescent material not by a series of layers as a laminated ablative substance of non-elected claim 22. For examining purposes the phrase was interpreted as “wherein the intumescent material is intermixed in different quantities, and to be applied in successive layers to the surface, so that ~~the ablative composition is to~~ be formed by a series of layers”, i.e. as intent of use of the ablative composition.

Claims 8 and 9 recite, “wherein the ablative composition has an overall thickness”, which renders the claim indefinite because claim 1 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to the surface to form a coating layer. For

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examining purposes the phrase was interpreted as “wherein the ablative composition is to applied to has an overall thickness”, i.e. as intent of use of the ablative composition.

Claim 13 recites, “an intumescent material intermixed with a second quantity of said ablative material **and applied** as a second ablative layer on said first ablative layer; and wherein said first and second layers **cooperatively form said ablative composition**”, which renders the claim indefinite because claim 13 is a composition claim, which should not recite a step of applying the ablative composition, and because the ablative composition of claim 13 is formed by mixing the ablative material with the intumescent material not by a series of layers as a laminated ablative substance of non-elected claim 22. For examining purposes the phrase was interpreted as “an intumescent material intermixed with a second quantity of said ablative material ~~and~~ adapted to be applied as a second ablative layer on said first ablative layer; ~~and wherein said first and second layers cooperatively form said ablative composition~~”, i.e. as intent of use of the ablative composition.

Claim 15 recites, “wherein the plurality of layers comprising said intumescent material and said ablative material are formed to comprise the ablative composition”, which renders the claim indefinite because claim 13 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to form a coating layer. For examining purposes the phrase was interpreted as “wherein the ablative composition comprising said intumescent material and said ablative material is adapted to form a plurality of layers comprising said intumescent material and said ablative material are formed to comprise the ablative composition”, i.e. as intent of use of the ablative composition.

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Claims 16, 17, and 18 recite, “wherein the plurality of layers comprising the intumescent material and the ablative material are further formed”, which renders the claim indefinite because claim 13 is a composition claim, which does not (and should not) recite a step of applying the ablative composition to form a coating layer. For examining purposes the phrase was interpreted as “wherein the ablative composition comprising said intumescent material and said ablative material is adapted to form the plurality of layers are further formed”, i.e. as intent of use of the ablative composition.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 8-9, 12-13, 15-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawko et al (US 4,088,806).

Sawko et al disclose an intumescent-ablator coating composition which comprises *any conventional intumescent composition*, e.g. composition having ammonium salt of 1,4-nitroaniline-2-sulfonic acid dispersed in an epoxy/polysulfide binder system (See column 3, lines 52-58), combined with an endothermic ablative filler having a decomposition temperature about or within the exothermic region of the intumescent agent (See Abstract; column 3, lines 50-68 to column 4, lines 1-2, 35-38, 50-65; column 5, lines 15-20). The intumescent-ablator coating composition may comprise 20-70 wt % of the intumescent agent (See column 3, lines 67-68), 0.5-2.0 wt % of epoxy polymeric binder (See column 4, lines 1-2), and the ablative filler (See

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column 5, lines 15-18). Sawko et al teach that a factor which influences the amount of endothermic filler which is admixed with the intumescent composition is that it is advantageous to add as much filler as possible in order to compensate for the exothermicity of the decomposition of the intumescent agent (See column 5, lines 1-4). In practice, however, it is impossible to add enough filler to fully counterbalance the heat evolved upon degradation of the intumescent agent without adversely affecting the properties of the composition (See column 5, lines 4-15). *Normally*, from about 5 weight percent to 30 weight percent of the filler is incorporated in the base intumescent composition (See column 5, lines 15-18).

As to claims 2-5, 8-9, 13, 15-18, as was discussed above, the limitations of the claims were treated as intended use limitations. It is well settled that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since a composition of McGinnis et al comprises all components of the claimed composition, the use of claims have not been given any patentable weight. One of ordinary skill in the art would reasonably expect that the composition would be capable performing the intended use.

6. Claims 1-5, 8-9, 11, 12, 13, 15-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Tzur (US 4,632,865).

Tzur teaches an intumescent-ablator endothermic composition (See column 2, lines 35-36) comprising a strong ablator such as **cork** as a major ablator (See column 3, lines 41-42) containing hydrated inorganic salts, combined with an intumescence agent provides better heat insulation properties than either of the systems by itself (See column 2, lines 34-42), e.g., a

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duration of time up to 30 minutes and more and which is useful for protecting various media objects (See column 1, lines 41-44). The composition comprises a binder such as **epoxy** resin (See column 19, lines 55-57).

As to claims 2-5, 8-9, 13, 15-18, as was discussed above, the limitations of the claims were treated as intended use limitations. It is well settled that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since a composition of McGinnis et al comprises all components of the claimed composition, the use of claims have not been given any patentable weight. One of ordinary skill in the art would reasonably expect that the composition would be capable performing the intended use.

7. Claims 1-5, 8-9, 12-13, 15-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by McGinnis et al (US 5,603,990).

McGinnis et al disclose that it is known in the art to use a composition made by blending water-insoluble *intumescent* agents, including selective salts of nitro aromatic amine compounds such as 4,4'-dinitrosulfanilimide, with **epoxy**-polysulfide or **epoxy**-cholorsulfonated polyethylene binder systems, and with **ablatives** and endothermic tigers, including zinc borate and hydrated endothermic fillers such as aluminum hydroxide pigments to counter an exothermic char-forming reaction effect of the nitro aromatic intumescent species (claimed ablative composition) adapted to form intumescent coatings having good integrity and offering resistance to high humidity (See column 2, lines 59-67 to column 2, lines 1-4).



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As to claims 2-5, 8-9, 13, 15-18, as was discussed above, the limitations of the claims were treated as intended use limitations. It is well settled that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since a composition of McGinnis et al comprises all components of the claimed composition, the use of claims have not been given any patentable weight. One of ordinary skill in the art would reasonably expect that the composition would be capable performing the intended use.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawko et al.

As was discussed above, Sawko et al teach that a factor which influences the amount of endothermic filler which is admixed with the intumescent composition is that it is advantageous to add as much filler as possible in order to compensate for the exothermicity of the decomposition of the intumescent agent (See column 5, lines 1-4) without adversely affecting the properties of the composition (See column 5, lines 4-15). However, Sawko et al fail to teach that concentration of components in a coating composition may be in claimed range.

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It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters (including those of claimed invention) in Sawko et al through routine experimentation depending on particular intumescent composition in the absence of showing of criticality. Moreover, it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987). It is also held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzur/McGinnis et al/ in view of Sawko et al.

The cited prior art fails to teach that concentration of components in a coating composition may be in claimed range. As was discussed above, Sawko et al teach that a factor which influences the amount of endothermic filler which is admixed with the intumescent composition is that it is advantageous to add as much filler as possible in order to compensate for the exothermicity of the decomposition of the intumescent agent (See column 5, lines 1-4) without adversely affecting the properties of the composition (See column 5, lines 4-15).

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It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular intumescent composition in the absence of showing of criticality. Moreover, it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987). It is also held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

11. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawko et al/Tzur/McGinnis et al/ in view of Deogan et al (US 5,900,281).

The cited prior art fails to teach that the intumescent material is ammonium polyphosphate.

Deogan et al teach that well known intumescent-ablative systems containing ammonium polyphosphate as intumescent material swell to produce a char more than five times the original thickness providing superior thermal efficiency (See column 1, lines 57-67; column 2, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used well known intumescent-ablative systems containing ammonium polyphosphate as intumescent material as a second component in a method of the cited prior art

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with the expectation of providing the desired superior thermal efficiency, as taught by Deogan et al.

12. Claims 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawko et al /McGinnis et al/ in view of Tzur.

The cited prior art fails to teach that the ablative material is **cork**-based. Tzur teaches that intumescent-ablator comprising a strong ablator containing hydrated inorganic salts and cork (See column 3, lines 40-46), combined with an intumescence agent provides better heat insulation properties than either of the systems by itself (See column 2, lines 34-42), e.g., a duration of time up to 30 minutes and more and which is useful for protecting various media objects (See column 1, lines 41-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used intumescent-ablator comprising a strong ablator containing hydrated inorganic salts and cork, combined with an intumescence agent as a second component in the cited prior art with the expectation of providing the desired better heat insulation properties than either of the systems by itself, e.g., a duration of time up to 30 minutes and more, as taught by Tzur.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone numbers for the

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organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 000000.

ELENA TSOY  
PRIMARY EXAMINER

*ETsoy*

Elena Tsoy  
Examiner  
Art Unit 1762

March 5, 2007